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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/678,725

10/03/2003

Robert C. Lam

01170/00078

6124

43215

7590

04/25/2007

EMCH, SCHAFFER, SCHAUB & PORCELLO, CO., L.P.A.

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EXAMINER

CHOI, PETER Y

ART UNIT

PAPER NUMBER

1771

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/678,725	<b>Applicant(s)</b> LAM, ROBERT C.	
	<b>Examiner</b> Peter Y. Choi	<b>Art Unit</b> 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,4,5,7,9,14,15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4,5,7,9,14,15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## FINAL ACTION

### *Claim Objections*

1. Claim 17 is objected to because of the following informalities: the claim recites “wherein the fibrous base material comprises about 75% to about 855”. It appears Applicant intended to write “85%”. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15, dependent from claim 14, recites that “the fibers are less fibrillated aramid fibers”. Currently amended claim 14 recites that the fibrous base material comprises about 75% to about 85%, by weight, fibers and wherein the fibrous base material comprises about 35 to about 45% of a less fibrillated fiber, about 5 to about 15% cotton fibers, and about 2 to about 20% carbon fibers. It is unclear to which fibers is intended in the limitation of claim 14 wherein “the fibers are less fibrillated aramid fibers”. Since less fibrillated aramid fibers are already included in claim 14, if Applicant intended “the fibers” to further narrow the aforementioned less fibrillated aramid fibers of claim 14, claim 15 would not further limit the claim from which it depends. Additionally, it is unclear how the less fibrillated aramid fibers, the cotton fibers, and the carbon fibers can each be less fibrillated aramid fibers, as set forth in claim 15.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 2, 4, 7, 9, 14, 15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,001,750 to Lam.

Claims 2, 4, 7, 9, 14, 15, and 18 remain rejected as substantially set forth in the Non-Final Rejection of November 15, 2006, sections 8 and 9.

***Response to Arguments***

6. Applicant's arguments filed February 5, 2007, have been fully considered but they are not persuasive. Applicant argues that Lam does not disclose the combinations of claims 14 and 17. Examiner respectfully disagrees. As set forth in the Non-Final Rejection of November 15, 2006, sections 8 and 9, an embodiment of the fibrous based material comprises about 10 to about 50% by weight of less fibrillated aramid fiber, about 5 to about 25% carbon fibers, about 0 to about 10% cotton fibers, about 0.5 to about 5% phenolic novoloid fibers, about 15 to about 35% by weight of filler material, and about 5 to about 20% by weight of carbon particles (column 10, lines 40-46). The total fiber percentage and the filler percentage read on the claimed ranges. The reference teaches air voids of at least about 50% and in certain embodiments at least about 60% or higher (column 8, lines 38-41). Therefore, the claimed less fibrillated aramid fiber percentage

and filler percentage are within the percentage ranges disclosed in the reference as set forth above. Additionally, the claimed cotton fiber percentage and the carbon fiber percentage overlap the percentage ranges in the reference as set forth above as well. Since the claimed ranges are either disclosed within the reference or overlap the ranges disclosed in the reference, the reference appears to disclose with sufficient specificity the claimed subject matter.

Applicant argues that Lam does not disclose or suggest the limitations of claim 17. It should be noted that Examiner did not reject claim 17 as anticipated by Lam.

#### ***Claim Rejections - 35 USC § 102***

7. Claims 2, 4, 7, 9, 14, 15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,130,176 to Lam.

Claims 2, 4, 7, 9, 14, 15, 17, and 18 remain rejected as substantially set forth in the Non-Final Rejection of November 15, 2006, sections 8 and 10.

#### ***Response to Arguments***

8. Applicant's arguments filed February 5, 2007, have been fully considered but they are not persuasive. Applicant argues that Lam does not disclose the combinations of claims 14 and 17. Examiner respectfully disagrees. As set forth in the Non-Final Rejection of November 15, 2006, sections 8 and 10, an embodiment of the fibrous based material comprises about 10 to about 50% by weight of less fibrillated aramid fiber, about 2 to about 15% carbon fibers, about 5 to about 20% cotton fibers, about 10 to about 35% by weight of filler material, and about 10 to about 35% by weight of carbon particles (column 8, line 63 to column 9, line 2). The total fiber percentage

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and the filler percentage read on the claimed ranges. The reference teaches air voids of at least about 50% and in certain embodiments at least about 60% or higher (column 7, lines 46-50).

Therefore, the claimed less fibrillated aramid fiber percentage and filler percentage are within the percentage ranges disclosed in the reference as set forth above. Additionally, the claimed cotton fiber percentage and the carbon fiber percentage overlap the percentage ranges in the reference as set forth above as well. Since the claimed ranges are either disclosed within the reference or overlap the ranges disclosed in the reference, the reference appears to disclose with sufficient specificity the claimed subject matter.

Regarding claim 17, the claimed less fibrillated aramid fiber percentage and filler percentage are within the percentage ranges disclosed in the reference as set forth above. Additionally, the claimed cotton fiber percentage and the carbon fiber percentage overlap the percentage ranges in the reference as set forth above as well. Since the claimed ranges are either disclosed within the reference or overlap the ranges disclosed in the reference, the reference is deemed to anticipate the claimed ranges.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,001,750 to Lam in view of USPN 5,646,076 to Bortz.

Regarding claims 5 and 19, Lam does not appear to teach that the fibrous base material is a woven fibrous base material. Since Lam is silent as to the type of fibrous base material, it would have been necessary and thus obvious to look to the prior art for conventional fabric types associated with friction materials. Bortz provides this conventional teaching showing that it is known in the art to form friction materials wherein the fibrous base material is impregnated with a resin, has a void volume preferably more than 50%, and is a woven fabric (column 2 lines 41-53, column 5 lines 14-17, column 10 lines 54-64). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make friction material of Lam wherein the fibrous material comprises a woven fabric, as taught by Bortz, motivated by the desire to form a friction material impregnated with a resin having a high void volume with a conventional fibrous base material.

Regarding claim 19, Lam teaches a friction material comprising a fibrous base material wherein the fibrous base material comprises about 75% to about 85%, by weight, fibers and about 15% to about 25%, by weight, fillers based on the weight of the fibrous base material, wherein the fibrous base material has an average voids volume from about 50% to about 85%, wherein the fibrous base material is impregnated with a resin, and wherein the fibrous base material is a woven fibrous material (see entire document including Abstract, column 10 lines 40-46, column 8 lines 38-41).

11. Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,130,176 to Lam in view of USPN 5,646,076 to Bortz.

Regarding claims 5 and 19, Lam does not appear to teach that the fibrous base material is a woven fibrous base material. Since Lam is silent as to the type of fibrous base material, it would have been necessary and thus obvious to look to the prior art for conventional fabric types associated with friction materials. Bortz provides this conventional teaching showing that it is known in the art to form friction materials wherein the fibrous base material is impregnated with a resin, has a void volume preferably more than 50%, and is a woven fabric (column 2 lines 41-53, column 5 lines 14-17, column 10 lines 54-64). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make friction material of Lam wherein the fibrous material comprises a woven fabric, as taught by Bortz, motivated by the desire to form a friction material impregnated with a resin having a high void volume with a conventional fibrous base material.

Regarding claim 19, Lam teaches a friction material comprising a fibrous base material wherein the fibrous base material comprises about 75% to about 85%, by weight, fibers and about 15% to about 25%, by weight, fillers based on the weight of the fibrous base material, wherein the fibrous base material has an average voids volume from about 50% to about 85%, wherein the fibrous base material is impregnated with a resin, and wherein the fibrous base material is a woven fibrous material (see entire document including Abstract, column 7 lines 46-50, column 8 line 63 to column 9 line 2).

### ***Response to Arguments***

12. Applicant's arguments with respect to claims 5 and 19 have been considered but are moot in view of the new grounds of rejection.



***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Y. Choi whose telephone number is (571) 272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Peter Y. Choi  
April 12, 2007



ANDREW PIZIALI  
PRIMARY EXAMINER